

## Rotary drives ERMO, electric

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for the  
star!

## Key features

### At a glance

#### General

- Electric rotary drive with stepper motor and integrated gear unit
- ServoLite – regulated operation with encoder
- Sturdy bearing for high forces and torques
- Backlash-free pre-stressed rotating plate with very good axial eccentricity and concentricity
- Optional holding brake
- Optionally with pneumatic or electric energy through-feed
- Simple and precise mounting

#### Application areas

- Rotating and positioning of parts
- Simple rotary indexing table applications
- As a rotary axis in multi-axis applications

### Optimised Motion Series (OMS) – Package solution with motor and motor controller

A package that makes positioning easier than ever before. The Optimised Motion Series is as easy to handle as a pneumatic cylinder, but with the functionality of an electric drive.



#### Simple selection

- Easy sizing and selection using cycle time diagrams
- No special knowledge of electric drive technology required

#### Ordering and logistics

- All the necessary individual parts under a single part number
- Motors mounted on the rotary drive

#### Quick to configure

- Parameterisation and commissioning via web server/browser
- Parameterise up to 7 freely definable positions directly on the PC

### For simple positioning tasks

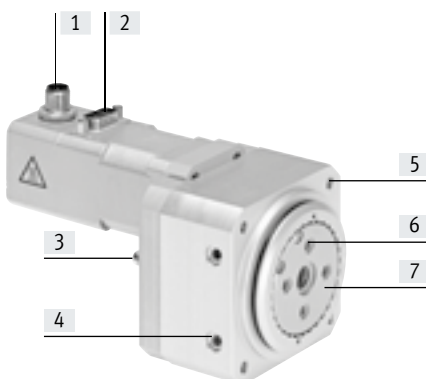
#### Rotary drive ERMO



#### Motor controller CMMO-ST



### The technology in detail



- [1] Encoder connection
- [2] Motor connection
- [3] Proximity sensor for homing or position sensing
- [4] Thread/centring elements for mounting
- [5] Thread for mounting
- [6] Thread/centring elements for attachments
- [7] Rotating plate

## Key features

### The technology in detail

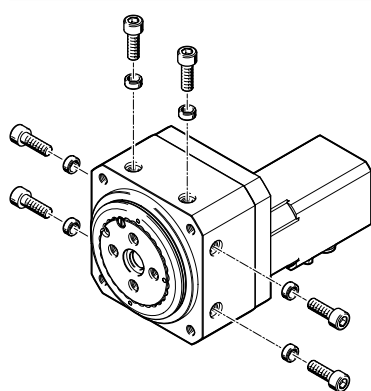
#### Energy through-feed



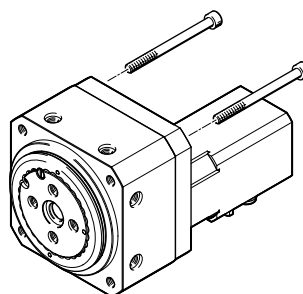
- The energy through-feed can be used to transfer electrical signals or compressed air through the hollow shaft. This enables fast and easy supply to the parts mounted on the rotating plate, even for infinitely rotating applications.
- Also suitable for IO-Link signal data transfer.
- The energy through-feed cannot be used in combination with the stop kit EADP-ES-R3.

### Mounting options

#### From the side

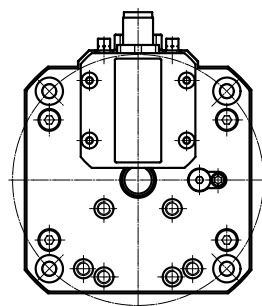


#### From the front/rear

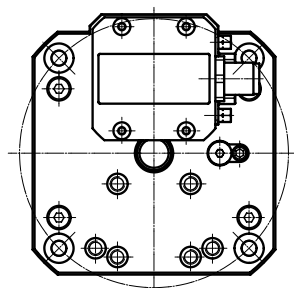


### Motor mounting variants

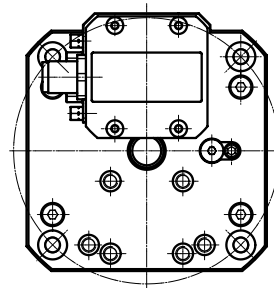
#### Top (standard)



#### Left (feature L)



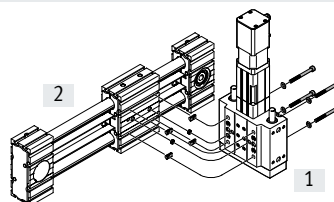
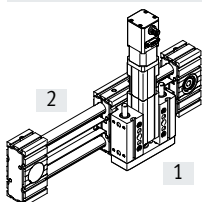
#### Right (feature R)



## Key features

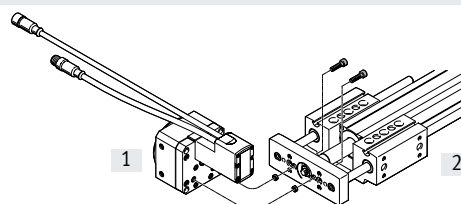
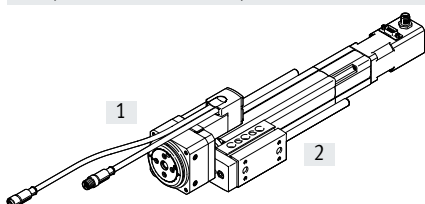
### Possible combinations within the Optimised Motion Series (OMS)

Electric cylinder EPCO on toothed belt axis ELGR



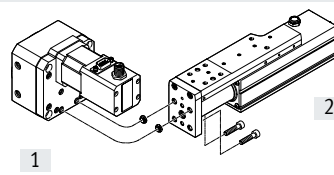
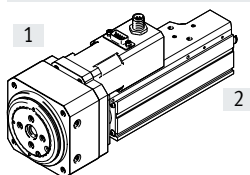
Size		Accessories			
[1] EPCO	[2] ELGR	Slot nut	Centring sleeve	Screw	Washer
16	35	NST-3-M3 (x4)	ZBH-7 (x2)	M3x10 (x4)	-
25	45	NST-5-M5 (x4)	ZBH-7 (x2)	M5x50 (x4)	DIN125-A5.3 (x4)
40	55	NST-5-M5 (x4)	ZBH-7 (x2)	M5x65 (x4)	DIN125-A5.3 (x4)

### Rotary drive ERMO on electric cylinder EPCO



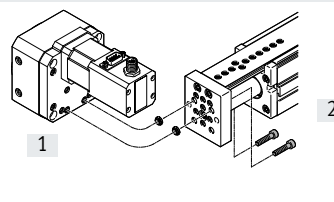
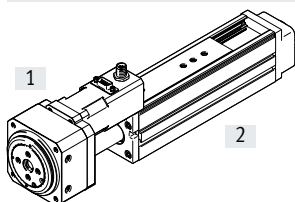
Size		Accessories	
[1] ERMO	[2] EPCO	Centring sleeve	Screw
12	16	ZBH-7 (x2)	M4x16 (x2)
16	25	ZBH-7 (x2)	M5x18 (x2)
25	40	ZBH-7 (x2)	M5x20 (x2)

### Rotary drive ERMO on mini slide EGSC



Size		Accessories	
[1] ERMO	[2] EGSC	Centring sleeve	Screw
12	32	ZBH-7 (x2)	M4x12 (x2)
16	45	ZBH-7 (x2)	M5x12 (x2)
25	45, 60	ZBH-7 (x2)	M5x12 (x2)
32	60	ZBH-7 (x2)	M5x15 (x2)

### Rotary drive ERMO on mini slide EGSL

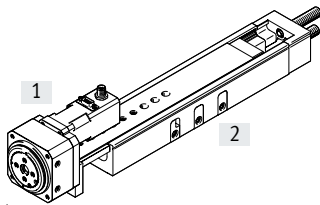


Size		Accessories	
[1] ERMO	[2] EGSL	Centring sleeve	Screw
12	35	ZBH-7 (x2)	M4x12 (x2)
16	45	ZBH-7 (x2)	M5x12 (x2)
25	55	ZBH-7 (x2)	M5x14 (x2)
32	55	ZBH-7 (x2)	M5x14 (x2)

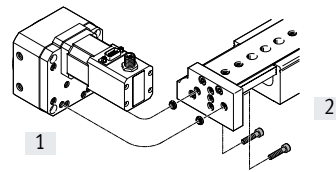
## Key features

### Possible combinations within the Optimised Motion Series (OMS)

#### Rotary drive ERMO on mini slide DGSL

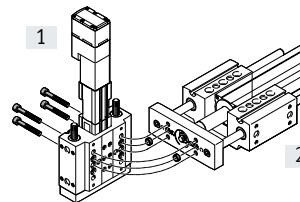
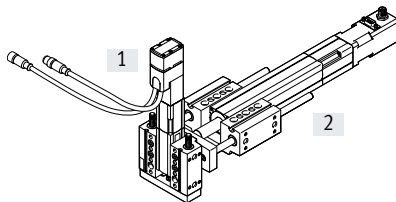


When combining ERMO-12 with DGSL-12, the proximity sensor SIEN cannot be used as a reference sensor for the ERMO.



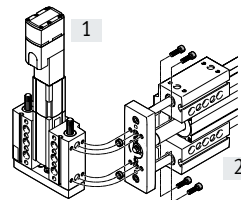
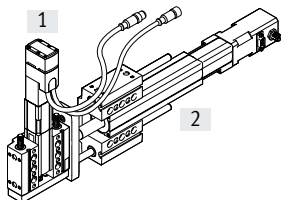
Size		Accessories	
[1] ERMO	[2] DGSL	Centring sleeve	Screw
12	12	ZBH-7 (x2)	M4x18 (x2)
25	20	ZBH-9-7 (x2)	M5x22 (x2)
25	25	ZBH-9-7 (x2)	M5x22 (x2)

#### Electric cylinder EPCO on electric cylinder EPCO, horizontal



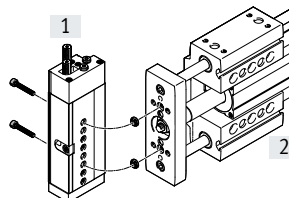
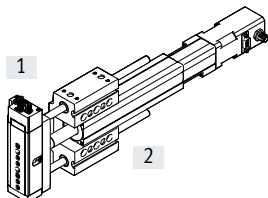
Size		Accessories	
[1] EPCO	[2] EPCO	Centring sleeve	Screw
16	25	ZBH-9 (x2)	M6x40 (x4)
25	40	ZBH-9 (x2)	M6x55 (x4)

#### Electric cylinder EPCO on electric cylinder EPCO, vertical



Size		Accessories	
[1] EPCO	[2] EPCO	Centring sleeve	Screw
16	25	ZBH-9 (x2)	M5x18 (x4)
25	40	ZBH-9 (x2)	M5x22 (x4)

#### Mini slide DGSL on electric cylinder EPCO



Size		Accessories	
[1] DGSL	[2] EPCO	Centring sleeve	Screw
8 (40mm) <sup>1)</sup>	16	ZBV-9-7 (x2)	M4x16 (x2)
10 (30mm) <sup>1)</sup>	25	ZBV-9-7 (x2)	M4x20 (x2)
12 (40mm) <sup>1)</sup>	40	ZBV-9-7 (x2)	M5x20 (x2)

1) Minimum stroke

## Type codes

001	Series
ERMO	Rotary drive, electric

002	Size
12	12
16	16
25	25
32	32

003	Motor type
ST	Stepper motor ST

004	Measuring unit
E	Encoder

005	Brake
	None
B	With brake

006	Cable outlet direction
	Standard
L	Left
R	Right

007	Energy through-feed
	None
E8	Electric, 8 signals
P2	Pneumatic, 2 ducts

008	Connecting cable to motor controller
	None
1.5E	1.5 m, suitable for energy chains, straight plug
2.5E	2.5 m, suitable for energy chains, straight plug
5E	5 m, suitable for energy chains, straight plug
7E	7 m, suitable for energy chains, straight plug
10E	10 m, suitable for energy chains, straight plug
1.5EA	1.5 m, suitable for energy chains, angled plug
2.5EA	2.5 m, suitable for energy chains, angled plug
5EA	5 m, suitable for energy chains, angled plug
7EA	7 m, suitable for energy chains, angled plug
10EA	10 m, suitable for energy chains, angled plug

009	Controller type
	None
C5	CMMO, 5 A

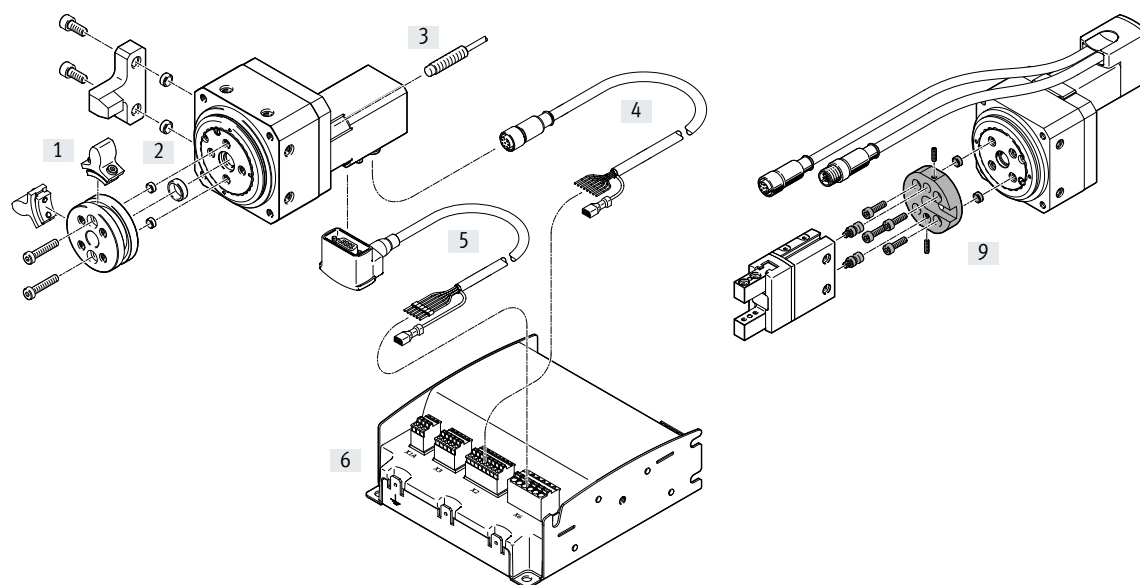
  

010	Bus protocol/activation
	None
DIO	Digital I/O interface
LK	IO-Link®

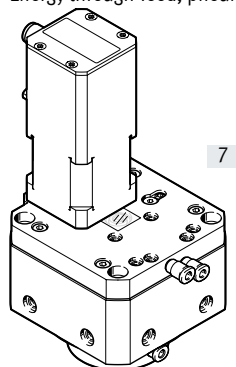
  

011	Switching input/output
	None
P	PNP
N	NPN

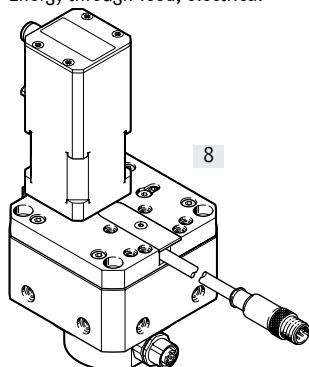
## Peripherals overview



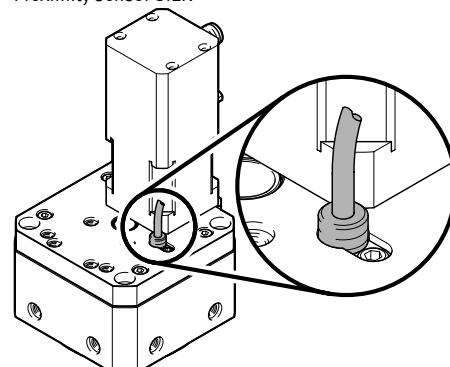
Energy through-feed, pneumatic



Energy through-feed, electrical



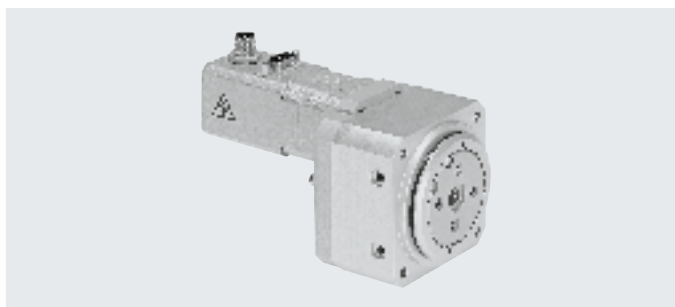
Proximity sensor SIEN



Accessories			
Type/order code	Description		→ Page/Internet
[1] Stop kit EADP-ES-R3	<ul style="list-style-type: none"> <li>• For homing to the end position</li> <li>• As end stop for rotary drives without brake</li> <li>• For safety functions</li> </ul>		24
[2] Centring sleeve ZBH	<ul style="list-style-type: none"> <li>• For centring attachments</li> <li>• For centring the rotary drive</li> </ul>		24
[3] Proximity sensor SIEN	For homing or position sensing		25
[4] Encoder cable NEBM	For connecting the encoder and controller		26
[5] Motor cable NEBM	For connecting the motor and controller		26
[6] Motor controller CMMO	For positioning the rotary drive		26
[7] Energy through-feed Pneumatic	<ul style="list-style-type: none"> <li>• For fast and easy pneumatic supply of the parts mounted on the rotating plate, infinite rotation</li> <li>• Cannot be used in combination with the stop kit EADP-ES-R3</li> </ul>		12
[8] Energy through-feed Electric	<ul style="list-style-type: none"> <li>• For fast and easy pneumatic supply of parts mounted on the rotating plate, infinite rotation</li> <li>• Cannot be used in combination with the stop kit EADP-ES-R3</li> </ul>		12
[9] Adapter kit DHAA	For drive/gripper connections		adapter kit

Data sheet

⊖ Size  
12, 16, 25, 32



General technical data		12	16	25	32
Size		12	16	25	32
Design		Electromechanical rotary drive with integrated gear unit			
Rotation angle		Infinite			
Repetition accuracy <sup>1)</sup>	[°]	±0.05	±0.05	±0.05	±0.1
Torsional backlash <sup>1)</sup>	[°]	0.2			
Positioning time		→ page 10			
Gear ratio		9:1			7:1
Type of mounting		Via female thread			
Mounting position		Any			
Product weight					
Without brake					
ERMO-...	[g]	475	900	1350	2200
ERMO-...-P2	[g]	535	960	1430	2340
ERMO-...-E8	[g]	535	960	1430	2340
With brake					
ERMO-...	[g]	–	960	1500	2380
ERMO-...-P2	[g]	–	1020	1580	2520
ERMO-...-E8	[g]	–	1020	1580	2520

1) Without payload when new

Mechanical data		12	16	25	32
Size		12	16	25	32
Nominal torque <sup>1)</sup>	[Nm]	0.15	0.8	2.5	5
Holding torque	[Nm]	0.33	0.81	4	7
Nominal rotary speed	[rpm]	100	100	66	50
Max. speed	[rpm]	200	200	150	100
Permissible mass moment of inertia	[kgm <sup>2</sup> x10 <sup>-4</sup> ]	3	13	65	164
Mass moment of inertia Jo	[kgm <sup>2</sup> x10 <sup>-4</sup> ]	0.0079	0.0383	0.114	0.390
Max. stop energy	[Jx10 <sup>-4</sup> ]	0.2	0.7	1.6	2.9

1) Theoretical torque at nominal rotary speed → page 10



## Data sheet

Electrical data		12	16	25	32
<b>Motor</b>					
Nominal operating voltage	[V DC]	24			
Nominal current	[A]	0.8	1.4	3	4.2
Step angle with full step	[°]	1.8 ±5%			
Duty cycle	[%]	100			
<b>Brake</b>					
Nominal voltage	[V DC]	-		24	
Nominal power	[W]	-		8	
Holding torque	[Nm]	-	1	2.5	2.5
Mass moment of inertia	[kgm <sup>2</sup> x10 <sup>-4</sup> ]	-	0.69	1.3	1.3
<b>Encoder</b>					
Rotor position encoder		Incremental			
Rotor position encoder measuring principle		Optical			
Pulses/revolution	[1/rev]	500			
Interface		RS422, TTL, AB channel + zero index			
Operating voltage	[V DC]	5			
Insulation class		B (130°C)			
<b>Operating and environmental conditions</b>					
Ambient temperature	[°C]	0 ... +50			
Storage temperature	[°C]	-20 ... +60			
Degree of protection		IP40			
Relative humidity	[%]	0 ... 85 (non-condensing)			
Corrosion resistance class CRC <sup>1)</sup>		1			
CE marking (see declaration of conformity)		To EU EMC Directive <sup>2)</sup>			
UKCA marking (see declaration of conformity)		To UK instructions for EMC			
Certification		RCM compliance mark			

1) Corrosion resistance class CRC 1 to Festo standard FN 940070

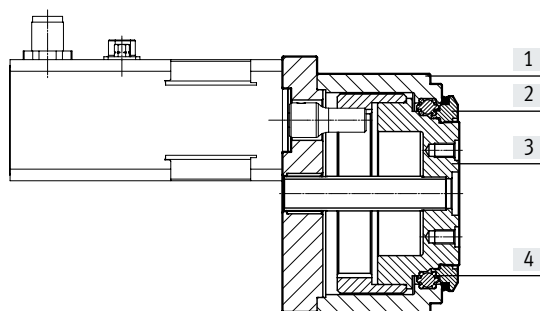
Low corrosion stress. Dry indoor application or transport and storage protection. Also applies to parts behind coverings, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

2) For information about the area of use, see the EC declaration of conformity: [www.festo.com/sp](http://www.festo.com/sp) → Certificates.

If the devices are subject to usage restrictions in residential, commercial or light-industrial environments, further measures for the reduction of the emitted interference may be necessary.

## Materials

## Sectional view

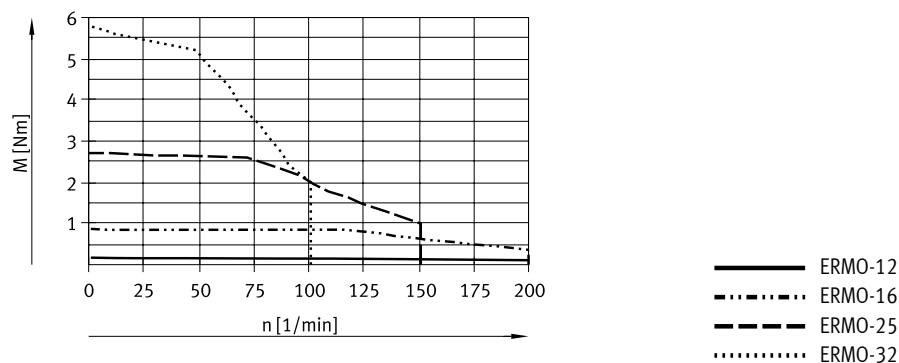


## Rotary drive

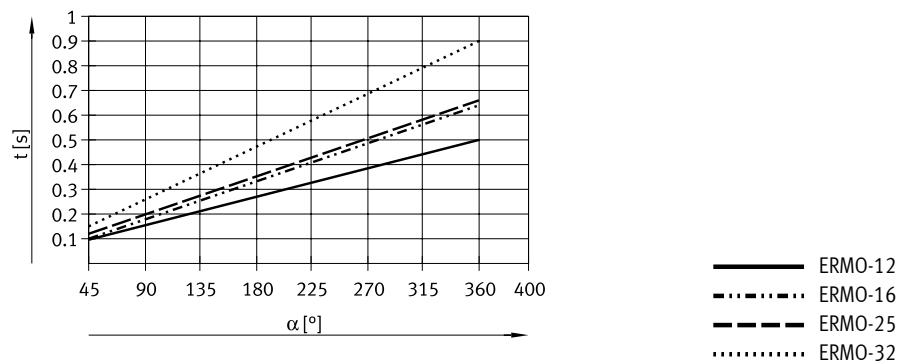
[1]	Housing	Anodised wrought aluminium alloy
[2]	Clamping ring	Anodised wrought aluminium alloy
[3]	Rotating plate	Anodised wrought aluminium alloy
[4]	Ball bearings	Rolled steel
	Sealing ring	NBR
	Note on materials	RoHS-compliant
	PWIS conformity	VDMA24364 zone III

## Data sheet

### Torque M as a function of rotational speed n



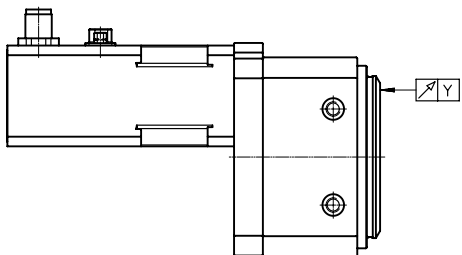
### Positioning time t as a function of rotation angle $\alpha$



### Axial eccentricity and concentricity

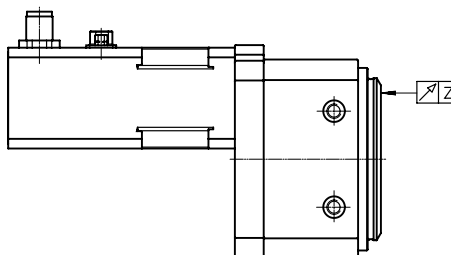
#### Axial eccentricity

Measured on the surface of the rotating plate at the plate edge, when new.



#### Concentricity

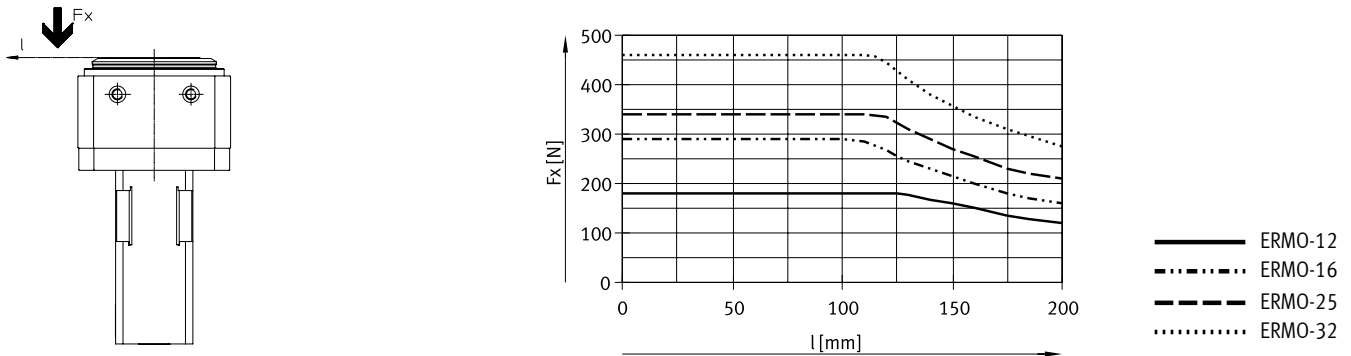
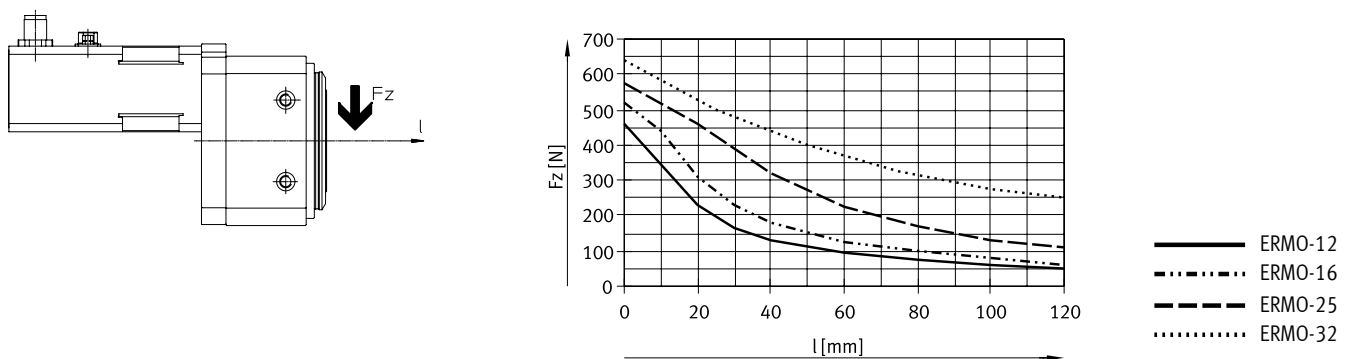
Measured at the centring hole of the rotating plate, when new.



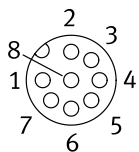
Size		12	16	25	32
Axial eccentricity Y	[mm]	<0.02	<0.02	<0.02	<0.04
Concentricity Z	[mm]	<0.02	<0.02	<0.02	<0.04

## Data sheet

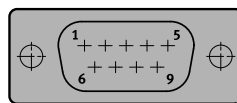
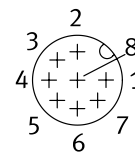
Max. permissible axial and radial force $F_x/F_z$					
Size		12	16	25	32
<b>Static</b>					
Axial force $F_x$	[N]	500	600	700	800
Radial force $F_z$	[N]	500	750	1200	2000
<b>Dynamic</b>					
Axial force $F_x$	[N]	180	290	350	450
Radial force $F_z$	[N]	200	300	450	550

 Max. dynamic axial force  $F_x$  as a function of lever arm  $l$ 

 Max. dynamic radial force  $F_z$  as a function of lever arm  $l$ 


## Pin allocation

 Motor  
ERMO-12/-16


ERMO-25/-32


 Encoder  
ERMO-12/-16/-25/-32


PIN	Function	PIN	Function	PIN	Function
1	String A	1	String A	1	Signal trace A
2	String A/	2	String A/	2	Signal trace A/
3	String B	3	String B	3	Signal trace B
4	String B/	4	String B/	4	Signal trace B/
5	n.c.	5	n.c.	5	Encoder GND
6	n.c.	6	n.c.	6	Signal trace N
7	Brake +24 V DC <sup>1)</sup>	7	Brake +24 V DC <sup>1)</sup>	7	Signal trace N/
8	Brake GND <sup>1)</sup>	8	Brake GND <sup>1)</sup>	8	VCC auxiliary supply +5 V
-	-	9	n.c.	GND	Shielding on plug housing

1) Only on motors with brake.

## Data sheet

### Energy through-feed

ERMO-...-P2

ERMO-...-E8

The energy through-feed cannot be used in combination with the stop kit EADP-ES-R3.



#### Function

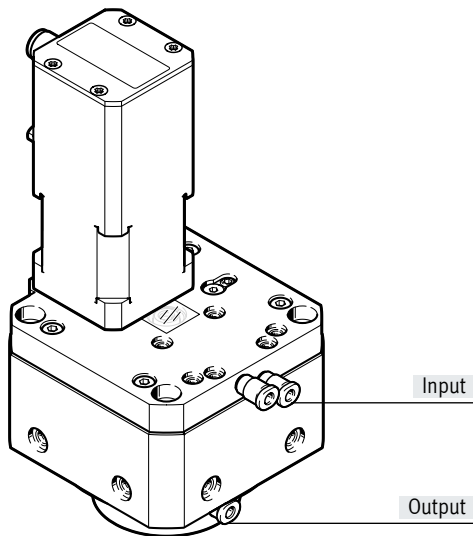
The energy through-feed can be used to transfer electrical signals or compressed air through the hollow shaft.

#### Advantages

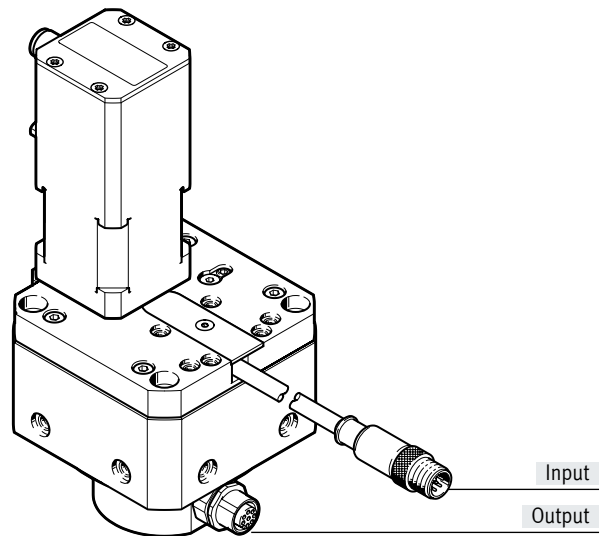
- Fast and easy supply of the parts mounted on the rotating plate
- Tubing and electrical cables are not damaged by the rotation
- Two variants available:
  - Pneumatic
  - Electric

#### Variants

Pneumatic: ERMO-...-P2



Electric: ERMO-...-E8



#### Note

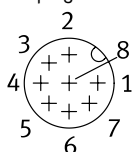
Connecting cable → page 25

## Data sheet

## Pin allocation – Energy through-feed, electrical

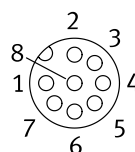
## Input

M12 plug

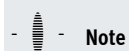


## Output

M12 socket



Technical data		
Variant	Pneumatic	Electric
Order code	P2	E8
Pneumatic		
Number of pneumatic ducts	2	–
Tubing O.D.	4	–
Operating pressure per duct [bar]	–0.85 ... 8	–
Connection	M5	–
Flow rate per duct [l/min]	86	–
Electric		
Number of signal lines	–	8
Rated voltage [V DC]	–	30
Max. current <sup>1)</sup> [A]	–	1.5
Cable cross section [mm <sup>2</sup> ]	–	0.1
Connection	–	M12

**Note**

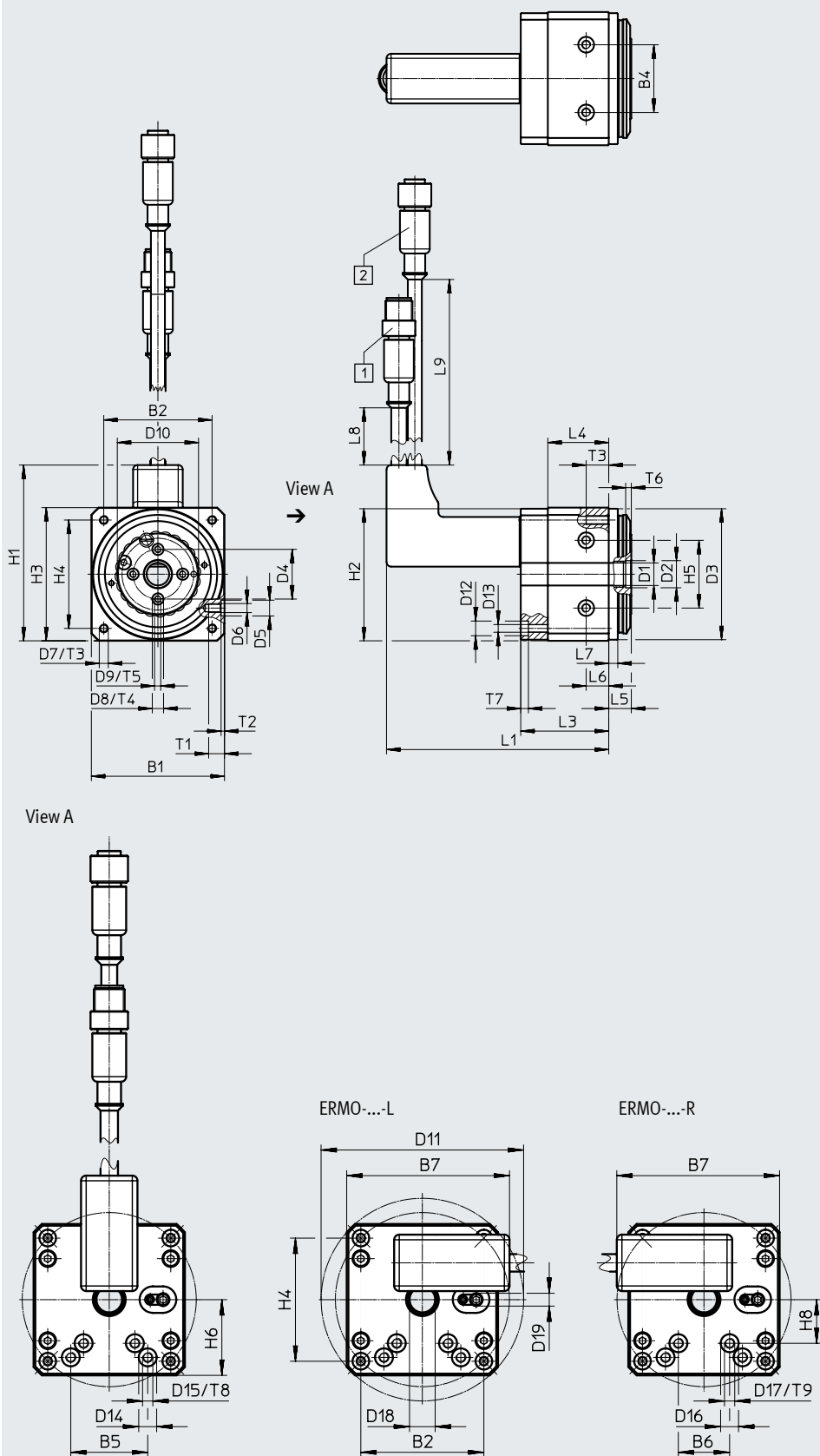
Also approved for vacuum operation.

Data sheet

Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Size: 12



- [1] Encoder cable
  - [2] Motor cable
- Min. bending radius of cables is 60 mm

## Data sheet

Size	B1 ±0.3	B2	B4 ±0.03	B5 ±0.02	B6 ±0.02	B7	D1 ∅	D2 ∅ H8	D3 ∅ f8	D4 ∅ ±0.02
12	59	48	30	30	20	46	10/7 <sup>1)</sup>	12	58	22
Size	D5 ∅ H7	D6	D7	D8 ∅ H7	D9	D10 ∅	D11 ∅ ±0.5	D12 ∅	D13 ∅	D14 ∅ H7
12	7	M4	M4	5	M3	36	79	6.5	3.4	7
Size	D15	D16 ∅ H7	D17	D18 max.	D19	H1	H2	H3 ±0.3	H4	H5 ±0.03
12	M4	7	M4	7	M5x0.5	80	58.5	59	48	30
Size	H6	H8	L1 ±1.5	L3 ±0.6	L4	L5 ±0.2	L6 ±0.1	L7 ±0.1	L8	L9
12	22.5	17	100	39	27	10	10	4	300	300
Size	T1	T2 +0.1	T3	T4 +0.1	T5	T6 +0.1	T7	T8	T9	
12	7	1.5	10	1.2	7	2.5	3.4	1.5	1.5	

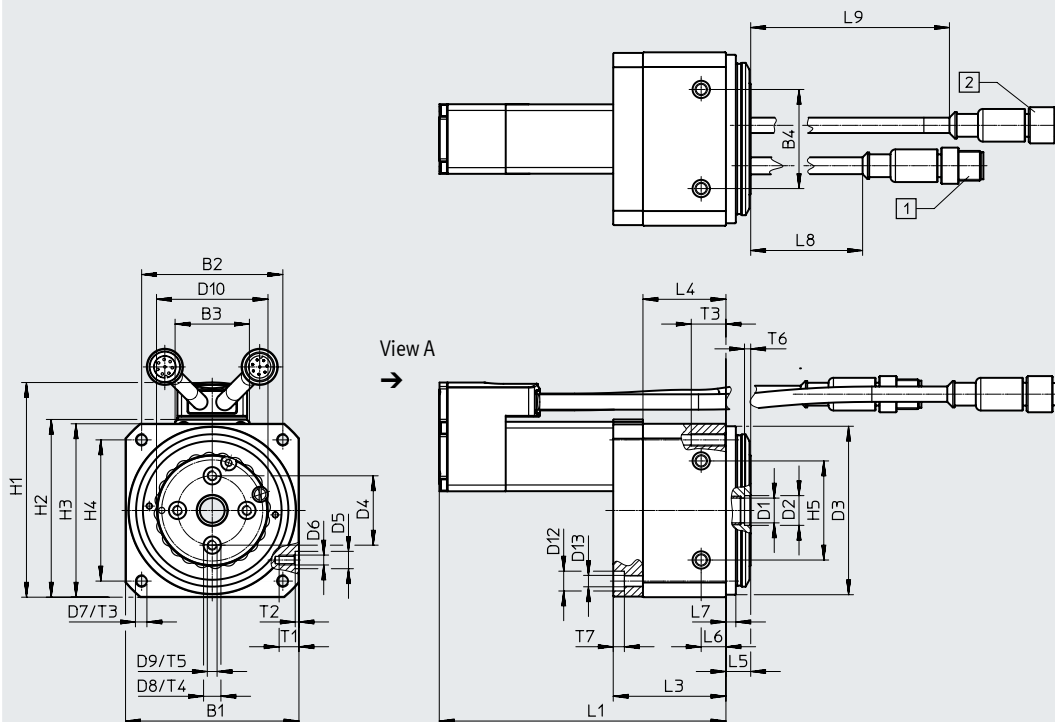
1) With attached motor

Data sheet

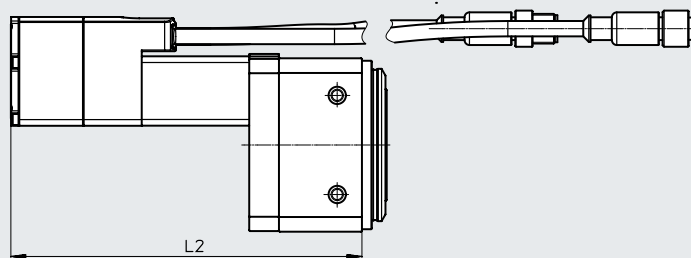
Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

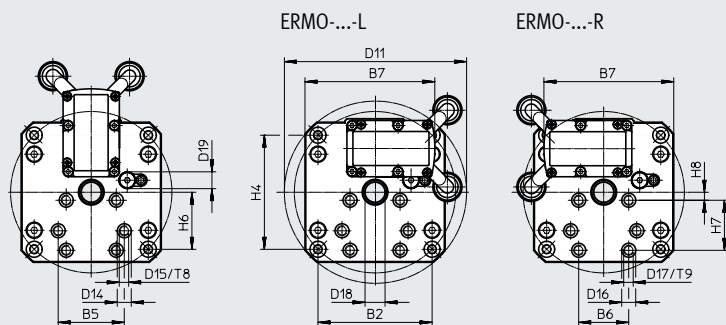
Size: 16



ERMO...-E-B



View A



- [1] Encoder cable
  - [2] Motor cable
- Min. bending radius of cables is 60 mm



## Data sheet

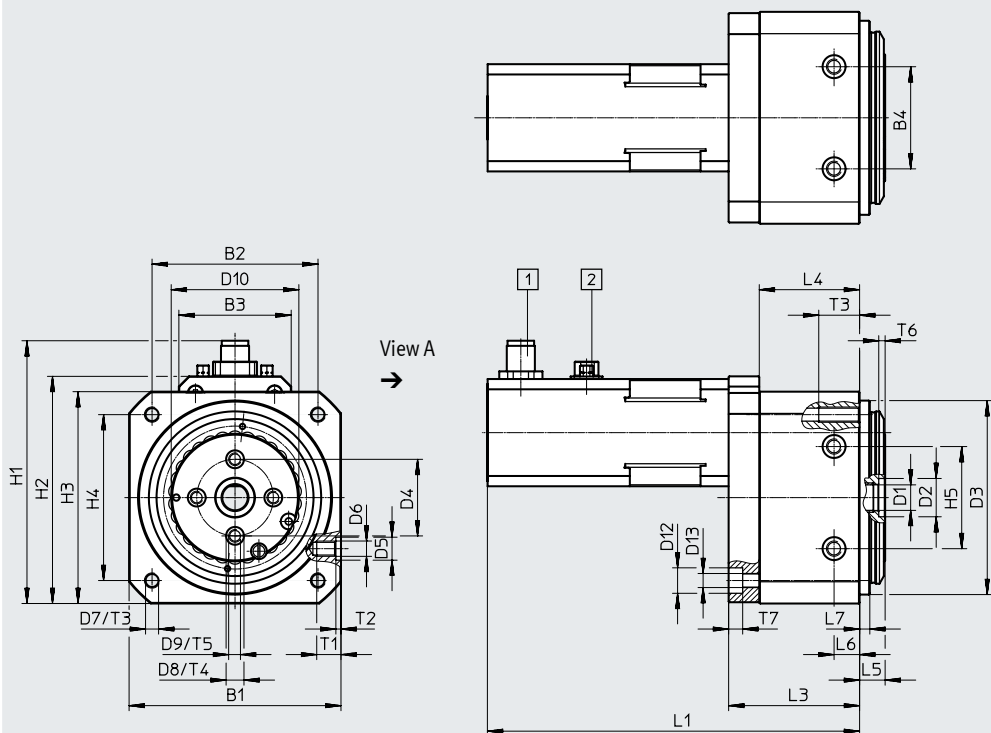
Size	B1 ±0.3	B2	B3	B4 ±0.03	B5 ±0.02	B6 ±0.02	B7	D1 ∅	D2 ∅ H8	D3 ∅ f8	D4 ∅ ±0.02
16	70	57	30	40	33	25	65	10	12	68	28
Size	D5 ∅ H7	D6	D7	D8 ∅ H7	D9	D10 ∅	D11 ∅ ±0.5	D12 ∅	D13 ∅	D14 ∅ H7	
16	7	M5	M5	7	M4	45	91	8	4.6	7	
Size	D15	D16 ∅ H7	D17	D18 max.	D19	H1	H2	H3 ±0.3	H4	H5 ±0.03	
16	M5	7	M5	–	M8x1	87	71.8	70	57	40	
Size	H6	H7 ±0.02	H8	L1 ±1.5	L2 ±1.5	L3 ±0.6	L4	L5 ±0.2	L6 ±0.1	L7 ±0.1	L8
16	19.3	25	4	116	142	45.5	33.5	10	10	4	250
Size	L9	T1	T2 +0.1	T3	T4 +0.1	T5	T6 +0.1	T7	T8	T9	
16	350	8	1.5	14	1.5	8	2.5	4.5	1.5	1.5	

Data sheet

Dimensions

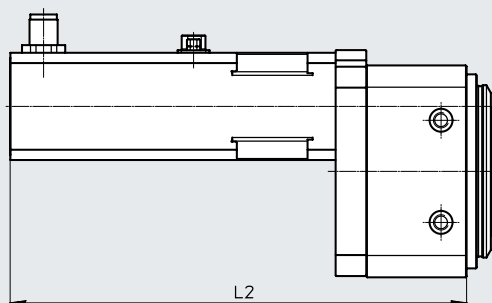
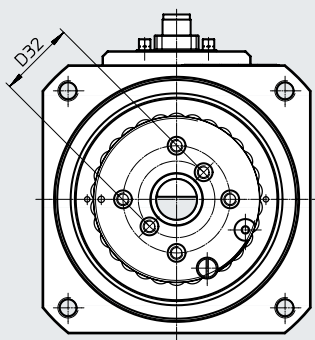
Download CAD data → [www.festo.com](http://www.festo.com)

Size 25/32



Size: 32

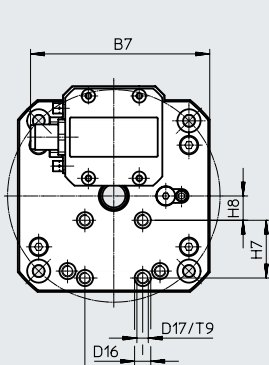
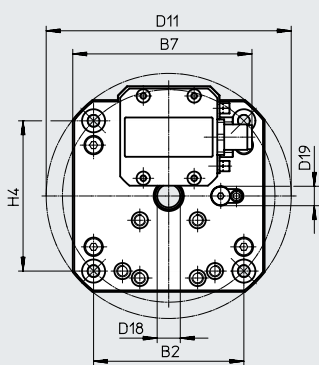
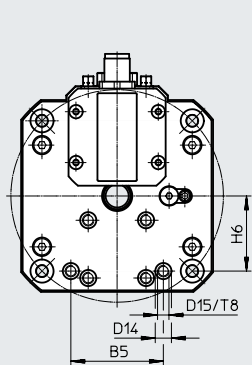
ERMO...-E-B



View A

ERMO...-L

ERMO...-R



- [1] Encoder cable
  - [2] Motor cable
- Min. bending radius of cables is 60 mm

## Data sheet

Size	B1 ±0.3	B2	B3	B4 ±0.03	B5 ±0.02	B6 ±0.02	B7	D1 ∅	D2 ∅ H8	D3 ∅ f8	D4 ∅ ±0.02
25	83	65	44	40	40	25	78	10	15	76	30
32	105	85	58	60	–	25	96	16/9 <sup>1)</sup>	20	96	42

Size	D5 ∅ H7	D6	D7	D8 ∅ H7	D9	D10 ∅	D11 ∅ ±0.5	D12 ∅	D13 ∅	D14 ∅ H7	D15
25	9	M6	M6	7	M5	50	106	10	5.5	7	M5
32	12	M8	M8	7	M5	65	135	11	6.6	–	–

Size	D16 ∅ H7	D17	D18 max.	D19	D32 ±0.02	H1	H2	H3 ±0.3	H4	H5 ±0.03
25	7	M5	10	M8x1	–	103	89	83	65	40
32	7	M5	9	M8x1	30	125	110.5	105	85	60

Size	H6	H7 ±0.02	H8	L1 ±1.5	L2 ±1.5	L3 ±0.6	L4	L5 ±0.2	L6 ±0.1	L7 ±0.1
25	32.5	25	10.5	146	179	51.3	39.3	10	10	4
32	–	25	15	148	189	46.5	34.5	12	10	6

Size	T1	T2 +0.1	T3	T4 +0.1	T5	T6 +0.1	T7	T8	T9
25	9.5	2	16	1.5	8.5	2.5	5.5	1.5	1.5
32	15	2.5	20	1.5	10	2.8	6.8	–	1.5

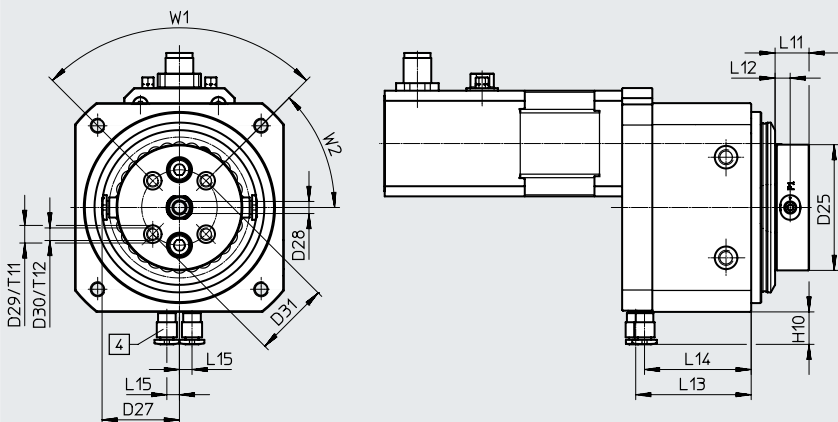
1) With attached motor

Data sheet

Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

P2 – Energy through-feed, pneumatic



[4] 4x push-in fitting  
QSM-M5-4-I

Size	D26 ∅	D27 ∅	D28 ∅	D29 ∅ H7	D30	D31 ∅ ±0.02	H10 ±1	L11
12	44	R29.5	3	5	M3	22	13	13.5
16	44	R31	4.8	7	M4	28	13	13
25	50	R31	4.8	7	M5	30	13	13.5
32	64	R36	4.8	7	M5	42	13	16

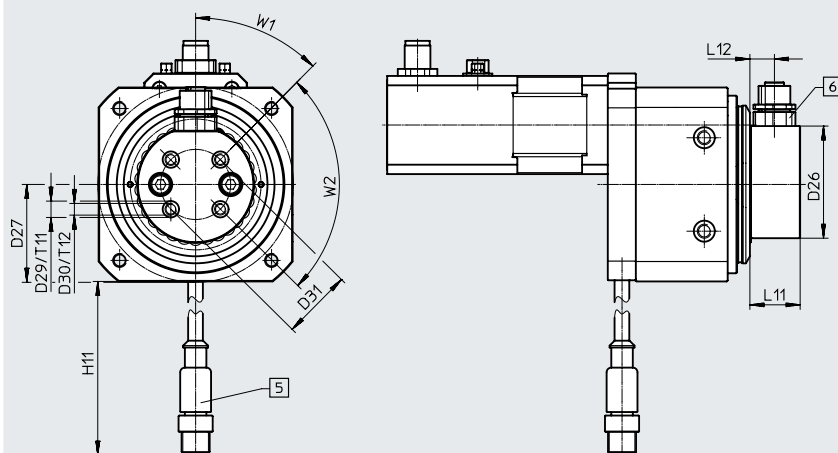
Size	L12	L13	L14	L15	T11 +0.1	T12	W1	W2
12	6	33.8	30.3	4	1.2	8	90°	45°
16	6	40.6	37	5	1.5	8	90°	45°
25	6	45.9	42.4	5	1.5	8.5	90°	45°
32	8.6	41.5	38	5	1.5	10	90°	22.5°

## Data sheet

## Dimensions

 Download CAD data → [www.festo.com](http://www.festo.com)

E8 – Energy through-feed, electrical



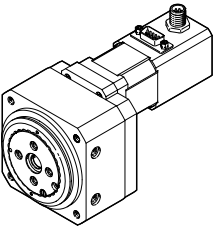
- [5] Plug M12, 8-pin  
 [6] Socket M12, 8-pin

Size	D26 ∅	D27 ∅	D29 ∅ H7	D30	D31 ∅ ±0.02	H11 ±10
12	44	R38.5	5	M3	22	205
16	44	R37.5	7	M4	28	195
25	48	R42	7	M5	30	185
32	64	R47	7	M5	42	175

Size	L11	L12	T11 +0.1	T12	W1	W2
12	21.5	10	1.2	8	54°	72°
16	21	10.5	1.5	8	55°	70°
25	21.5	10.5	1.5	8.5	45°	90°
32	21	11	1.5	10	45°	90°

## Data sheet

### ★ Core product range

Ordering data	Size	Part no.	Type
	12	★ 3008525	ERMO-12-ST-E
	16	★ 3008526	ERMO-16-ST-E
	25	★ 3008527	ERMO-25-ST-E
	32	★ 3008528	ERMO-32-ST-E

Festo core product range

- ★ Generally ready for dispatch from the factory within 24 hours
- ★ Generally ready for dispatch from the factory within 5 days

## Ordering data – Modular product system

Ordering table							
Modular system	12	16	25	32	Conditions	Code	Enter code
Module no.	<b>2954695</b>	<b>2954696</b>	<b>2954697</b>	<b>2954698</b>			
Function	Electric cylinder					<b>ERMO</b>	ERMO
Size	12	16	25	32		☆ -...	
Motor type	Stepper motor ST					☆ -ST	-ST
Measuring unit	Encoder					☆ -E	-E
Brake	None						
	-	With brake				<b>B</b>	
Cable outlet direction	Top (standard)						
	Left					<b>-L</b>	
	Right					<b>-R</b>	
Energy through-feed	None						
	Pneumatic, 2 ducts					<b>-P2</b>	
	Electrical, 8 signals					<b>-E8</b>	
Connecting cable to the motor controller	None						
	1.5 m, straight plug					☆ +1.5E	
	2.5 m, straight plug					☆ +2.5E	
	5 m, straight plug					☆ +5E	
	7 m, straight plug					☆ +7E	
	10 m, straight plug					☆ +10E	
	-	1.5 m, angled plug				☆ +1.5EA	
	-	2.5 m, angled plug				☆ +2.5EA	
	-	5 m, angled plug				☆ +5EA	
	-	7 m, angled plug				☆ +7EA	
-	10 m, angled plug				☆ +10EA		
Controller type	None						
	CMMO, 5 A				[1]	☆ +C5	
Bus protocol/actuation	None						
	Digital I/O interface					☆ DIO	
	IO-Link					☆ LK	
Switching input/output	None						
	NPN				[2]	☆ N	
	PNP					☆ P	

[1] **DIO, LK, N, P** Must be selected if controller type +C5 is selected.

[2] **N** Not with IO-Link LK

Festo core product range

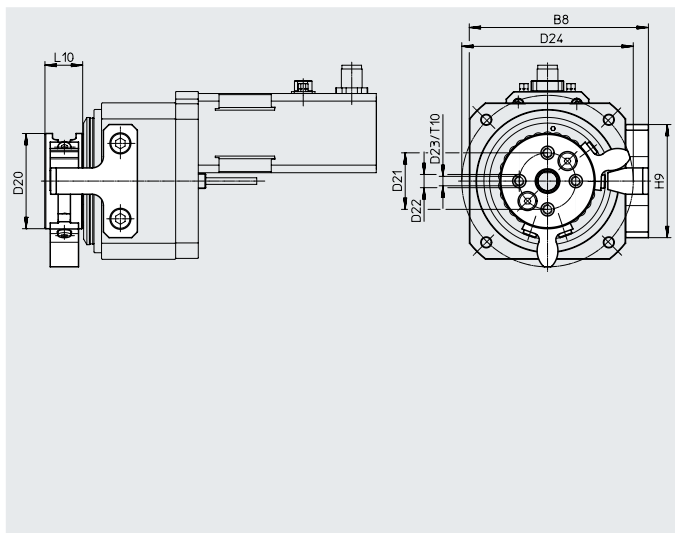
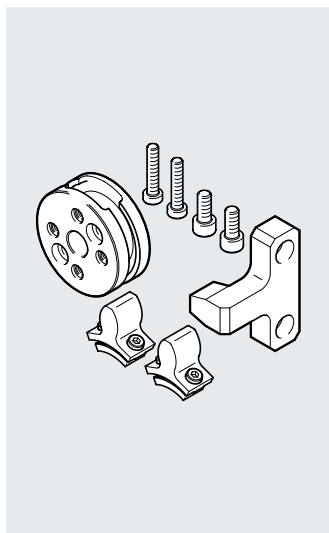


Generally ready for dispatch from the factory within 24 hours  
Generally ready for dispatch from the factory within 5 days

## Accessories

### Stop kit EADP

Material:  
 Housing: Anodised aluminium  
 Stops: Nickel-plated beryllium bronze




#### Dimensions and ordering data

For size	B8	D20 ∅ ±0.1	D21 ∅ ±0.1	D22 ∅ H7	D23	D24 ∅	H9	L10 ±0.1	T10
12	69	44	28	7	M4	74.8	40	16	16
16	80	44	28	7	M4	74.2	52	16	16
25	95	50.5	30	7	M5	91	60	20	20
32	120	64	42	7	M5	90	80	27	27

For size	Setting range of rotation angle		Weight [g]	Part no.	Type
	1 stop	2 stops			
12	0 ... 325	0 ... 280	96	3044562	EADP-ES-R3-12
16	0 ... 325	0 ... 280	100	2715501	EADP-ES-R3-16
25	0 ... 325	0 ... 270	210	2721599	EADP-ES-R3-25
32	0 ... 325	0 ... 270	290	2735411	EADP-ES-R3-32

#### Ordering data – Centring sleeves


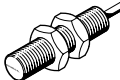
Data sheets → Internet: zbh

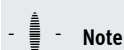
	For size	Description	Part no.	Type	PU <sup>1)</sup>
	12, 16	For centring the drive in the case of side mounting	8146544	ZBH-7-B	10
	25		8137184	ZBH-9-B	
	32		8137185	ZBH-12-B	
	12 ... 32	For centring attachments on the rotating plate	8146544	ZBH-7-B	
	12, 16	For centring attachments in the middle of the rotating plate	8137185	ZBH-12-B	
	25		191409	ZBH-15	

1) Packaging unit

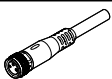
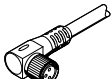



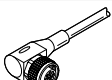
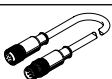
## Accessories

Ordering data – Proximity sensors M5/M8 (round design), inductive							Data sheets → Internet: sien
	Switching element function	Electrical connection	LED	Switching output	Cable length [m]	Part no.	Type
<b>For size 12</b>							
	N/O	Cable, 3-wire	■	PNP	2.5	★ 150370	SIEN-M5B-PS-K-L
		Plug M8x1, 3-pin			–	★ 150371	SIEN-M5B-PS-S-L
	N/C	Cable, 3-wire	■	PNP	2.5	150374	SIEN-M5B-PO-K-L
		Plug M8x1, 3-pin			–	150375	SIEN-M5B-PO-S-L
<b>For size 16 ... 32</b>							
	N/O	Cable, 3-wire	■	PNP	2.5	★ 150386	SIEN-M8B-PS-K-L
		Plug M8x1, 3-pin			–	★ 150387	SIEN-M8B-PS-S-L
	N/C	Cable, 3-wire	■	PNP	2.5	150390	SIEN-M8B-PO-K-L
		Plug M8x1, 3-pin			–	150391	SIEN-M8B-PO-S-L

**Note**

Cannot be fitted on size 16 in combination with motor attachment variant “left” (ERMO-16-...-L):

Ordering data – Connecting cables					Data sheets → Internet: nebu
	Electrical connection, left	Electrical connection, right	Cable length [m]	Part no.	Type
	Straight socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	159420	SIM-M8-3GD-2.5-PU
			2.5	★ 541333	NEBU-M8G3-K-2.5-LE3
			5.0	★ 541334	NEBU-M8G3-K-5-LE3
	Angled socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	★ 541338	NEBU-M8W3-K-2.5-LE3
			5.0	★ 541341	NEBU-M8W3-K-5-LE3

Ordering data – Connecting cables for energy through-feed					Data sheets → Internet: nebu
	Electrical connection, left	Electrical connection, right	Cable length [m]	Part no.	Type
	Straight socket, M12x1, 8-pin	Cable, open end, 8-wire	2	525616	SIM-M12-8GD-2-PU
			5.0	525618	SIM-M12-8GD-5-PU
			10.0	570008	SIM-M12-8GD-10-PU
	Angled socket, M12x1, 8-pin	Cable, open end, 8-wire	2.5	542256	NEBU-M12W8-K-2-N-LE8
			5.0	542257	NEBU-M12W8-K-5-N-LE8
			10.0	570007	NEBU-M12W8-K-10-N-LE8
	Straight plug, M12x1, 8-pin	Straight socket, M12x1, 8-pin	2	525617	KM12-8GD8GS-2-PU

Festo core product range

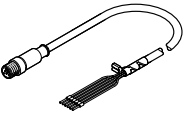
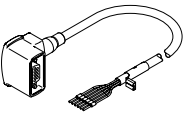
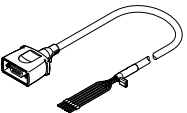
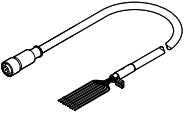
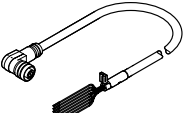


Generally ready for dispatch from the factory within 24 hours



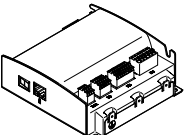
Generally ready for dispatch from the factory within 5 days

Accessories

Ordering data – Cables <sup>1)</sup>					
	For size	Description	Cable length [m]	Part no.	Type
<b>Motor cable</b>					
	12, 16	<b>Straight plug<sup>2)</sup></b> • Min. bending radius: 62 mm • Suitable for energy chains • Ambient temp.: -40 ... +80°C	1.5	☆ 1449600	NEBM-SM12G8-E-1.5-Q5-LE6
			2.5	☆ 1449601	NEBM-SM12G8-E-2.5-Q5-LE6
			5.0	☆ 1449602	NEBM-SM12G8-E-5-Q5-LE6
			7.0	☆ 1449603	NEBM-SM12G8-E-7-Q5-LE6
			10.0	☆ 1449604	NEBM-SM12G8-E-10-Q5-LE6
	25, 32	<b>Angled plug</b> • Min. bending radius: 62 mm • Suitable for energy chains • Ambient temp.: -40 ... +80°C	1.5	☆ 1450736	NEBM-S1W9-E-1.5-Q5-LE6
			2.5	☆ 1450737	NEBM-S1W9-E-2.5-Q5-LE6
			5.0	☆ 1450738	NEBM-S1W9-E-5-Q5-LE6
			7.0	☆ 1450739	NEBM-S1W9-E-7-Q5-LE6
			10.0	☆ 1450740	NEBM-S1W9-E-10-Q5-LE6
	25, 32	<b>Straight plug</b> • Min. bending radius: 62 mm • Suitable for energy chains • Ambient temp.: -40 ... +80°C	1.5	☆ 1450368	NEBM-S1G9-E-1.5-Q5-LE6
			2.5	☆ 1450369	NEBM-S1G9-E-2.5-Q5-LE6
			5.0	☆ 1450370	NEBM-S1G9-E-5-Q5-LE6
			7.0	☆ 1450371	NEBM-S1G9-E-7-Q5-LE6
			10.0	☆ 1450372	NEBM-S1G9-E-10-Q5-LE6
<b>Encoder cable</b>					
	12, 16, 25, 32	<b>Straight plug</b> • Min. bending radius: 68 mm • Suitable for energy chains • Ambient temp.: -40 ... +80°C	1.5	☆ 1451586	NEBM-M12G8-E-1.5-LE8
			2.5	☆ 1451587	NEBM-M12G8-E-2.5-LE8
			5.0	☆ 1451588	NEBM-M12G8-E-5-LE8
			7.0	☆ 1451589	NEBM-M12G8-E-7-LE8
			10.0	☆ 1451590	NEBM-M12G8-E-10-LE8
	25, 32	<b>Angled plug</b> • Min. bending radius: 68 mm • Suitable for energy chains • Ambient temp.: -40 ... +80°C	1.5	☆ 1451674	NEBM-M12W8-E-1.5-LE8
			2.5	☆ 1451675	NEBM-M12W8-E-2.5-LE8
			5.0	☆ 1451676	NEBM-M12W8-E-5-LE8
			7.0	☆ 1451677	NEBM-M12W8-E-7-LE8
			10.0	☆ 1451678	NEBM-M12W8-E-10-LE8

1) Other cable lengths on request.

2) Also suitable for connection to the energy through-feed outlet.

Ordering data – Motor controller			Data sheets → Internet: cmmo	
	Description	Part no.	Type	
	<b>With I/O interface</b>			
	Switching input/output PNP	☆ 1512316	CMMO-ST-C5-1-DIOP	
	Switching input/output NPN	☆ 1512317	CMMO-ST-C5-1-DION	
	<b>With IO-Link</b>			
Switching input/output PNP	☆ 1512320	CMMO-ST-C5-1-LKP		